

Aviation News

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Production Tempo Quickens At Lockheed: *First aerial photograph of Lockheed Aircraft Corp. since removal of wartime camouflage, reveals size of the Southern California factories where Constellation transports for commercial use and P-80 jet-propelled Shooting Stars for the AAF are in full production. At right are several Constellations, below them are PV-2 Harpoons, Navy bombers. The prototype of the Constitution also is being produced here.*

Trans-Atlantic Trip Frequency Seen Air Fare Cut Issue

Unknown commercial operating cost of C-54's also cited as top factor in charge determination; allowable trips per week split.....Page 31

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East Coast Executives Tell Congress of Policy Needs

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Political, Economic Bars Set for PICA Council Study

Session reconvenes in Montreal; first annual meeting of International Air Transport Association also slated to open there.....Page 37

Speed up

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- REPAIR JOBS



WT-4 Welder with normal or high power factor.

This steady little welder will stay on the job year after year handling heavy production or light repair work...cutting down costs and speeding up service for many profits. Twenty-seven current adjustments from 20-250 amperes permit using a wide variety of electrodes...make it the ideal a-c welder for all around shop work.

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THE AVIATION NEWS

Washington Observer



EXPORT LICENSES—End of the war has brought resumption of dickering by foreign firms for licenses to build U. S. aircraft and engine plants. France is seeking rights to produce Pratt & Whitney's R1800-C, but the State Department must approve all such agreements, and clearance has yet to be received. Generalists exist for the belief that the Navy is holding up this deal, as this is the engine powering the Grumman F4E, Vought F4U, as well as other military aircraft.

SWEDEN, TOO—Also reported to be interested in manufacturing P&W engines under license is Sweden, although the State Department has no record of an application from that country. Sweden built their engines before the war. Another pre-war P&W manufacturer showed their welders to examine the connection in Czechoslovakia.

PLANT DISPOSAL—Headcapping surplus plant disposal is Army's failure to outline its needs to the Surplus Property Administration, and a possible delay in declaring as surplus plants no longer in military production. More than a month ago, Army issued a press release listing some 30 aircraft facilities as "surplus." SPA has never received a declaration on any of them. To add to the confusion, most of the plants listed do not belong to the Army, and the service consequently has no authority to declare them surplus.

STANTON FOR PICAO—Serious thought is being given in Washington to the appointment of Deputy CAA Administrator Charles I. Stanton to a responsible technical post on PICAO. Until the death of President Roosevelt, Stanton was slated to replace Edward Weissen on the Civil Aeronautics Board. Weissen's recent appointment to the international organization having been agreed upon last February. Under present circumstances, Stanton probably could not be appointed to the international group because of irre-
s-

nions on the number of persons who may be named from any one country. It is believed, however, that certain waivers might be made because of Stanton's particular and unique qualifications for the job.

TAX CARRYBACK—Only a few surplus manufacturers are in line for large refunds under the tax carryback provisions. Only two of the major companies, according to reports in Washington, appear to have had a high enough base of normal earnings before the war to benefit with large refunds should net profits decline substantially below their current profits credits. These are Douglas and United Aircraft. Most of the other companies would have to operate during 1946 at a loss to benefit from the carryback provisions, even though during the war they paid heavy excess profits taxes. Payment of these heavy taxes, in fact, is what negates their relief under the carryback program.

BEFORE CONGRESS—Sharp reductions made by the Bureau of the Budget in proposed military aircraft appropriations has not only the industry worried, but also friends of aviation in Congress who want to see our air supremacy maintained. The present Congress is generally economy-minded, a situation which may work to the detriment of the maintenance of air power leadership and the aircraft industry.

PLANES VS. SHIPS—In the matter of the verbal assault over relative roles of battleships and aircraft carriers in the future Navy, the Navy itself perhaps unwittingly furnished potent ammunition for air proponents with its complete list of all vessels sunk during the war. Two battleships were sunk (at Pearl Harbor), both by planes. Of the five large carriers sunk, aircraft accounted for three, those of the six escort carriers lost also fell to air attack. Bado was lost with cruiser, one by aircraft, one of 10 sunk, and seven destroyers, 25 out of 71.



The Mitsubishi Ki 5 Japanese military glider is shown in this photograph from The Aeroplane. It can also act as the Goose, it has a long span of 72-ft and carries about 15 troops.



Washington observers do not expect a decision from CAB on the approval of American Mid Continent merger for almost a year, although a date for the hearing will be set for the near future.

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PEACETIME PREPAREDNESS

East Coast Aircraft Executives Tell Congress Of Policy Needs

Defense Program Investigating Committee urged to speed post-war airpower action: Army-Navy procurement, research, tax aid, plane availability, development financing stressed as vital basis for future plans is keynote.

By SCOTT HERSHEY

Leading East Coast aircraft executives emphasized to Congress last week the importance, to the industry and the nation, of a clearly expressed and understood policy for maintaining American airpower in the post-war world.

J. Carlton Ward, Jr., president of Fairchild, collected the views of the industry leaders who appeared before a Senate subcommittee of the Committee investigating the National Defense Program when he said:

Just Effort—Let us hydroplan and emphasize these facts: It is clear to the aviation industry that the fields of commercial air transportation and private airplane ownership, by themselves, can not insure maintenance of American airpower.

"It is equally clear to the aviation industry that research and development must continue if our

aviation must continue if our we might as to be preserved. Development alone will not maintain a healthy industry. Nor without sufficient production procurement can the Army, the Navy and the air force keep tactically up-to-date."

While the views of the aircraft executives differed on some details they were entirely in accord in their opinion that a research and development program for aircraft and associated equipment must be put into being at once to preserve technical staffs and the accumulation of skills and facilities which his made the nation superior in the air.

Buying War—They felt generally that pre-war procurement regulations, as presently centralized, are inadequate to maintain a necessary program as a foundation of

Airport Dangers

Maintenance and operation of airports must be improved if private flying is to achieve greater safety, the AAF says, on the basis of a study of liaison plane accidents. Of 216 accidents in a 18-month period, 47 were the outgrowth of "inefficiency in the airport or its operation." Cited were errors in the control tower, improperly marked runways, careless handling of gasoline, vehicles parked on, or too near runways, poor drainage. Frequent accidents occurred during night hours because checks were not in place or because no one was in the plane.

airpower. The company executives recommended that the traditional service order of 13 airplanes be revised or discarded. On the number of planes for future service orders, they varied from 30 to 50 up to 100.

H. M. Horner, president of United Aircraft Corp., told the committee it was his belief that the aircraft industry urgently requires three things from the government. These are:

- 1. A definite and continuing production program for the Army and Navy against which we can make future plans.
- 2. A satisfactory way by which we



THE GERMAN HORTEN V:

Described by the AAF as similar to but "farther developed" than the Northrop flying wing, this Horten V is one of the several variants of aerial glider aircraft developed by the Germans. The first version originally was a two-place plane, later was rebuilt and converted to a single-seat and extensively test flown in 1943. A newer version, equipped with jet units, is believed capable, as a fighter-

bomber, of a 550-mph. speed at 35,000-ft. The simplest model was built almost entirely of plastic. With a span of 55-ft., 6-in., length of 38-ft., 8-in., the wing area was 124 square feet. Power was provided by two 25-hp. 50-hp. engines driving two fixed pitch propellers. Maximum speed for the powered version was 282-mph with a maximum load of 956-lbs and a total weight of 3,270-lbs.



MODIFICATION CENTER BECOMES SURPLUS

The government has offered for sale at surplus the \$5,000,000 Denver modification center formerly operated by Continental Air Lines. The construction includes a 30-acre concrete apron, two hangars 665-ft-long, 66-ft-wide and 25-ft high; a high aisle, office wing, tool room and about a dozen to serve 800, a headquarters building, and power and heating plant.

can acquire the facilities in which to produce that program.

"A method by which we can finance our all-important experimental and development program."

Harner added that decisions on these points by the government are needed quickly but in the interim, the presently highly trained production and engineering staffs of the industry be dispersed.

Gray W. Vaughan, president of Curtiss-Wright, commented to the Senators that while there has been a great deal of talk of the necessity for developing sound, long-range government policies for National Defense, the clear-cut government program has emerged to date.

Need—He recommended a well-coordinated military aircraft requirements program, clear-cut military procurement policy, well-defined government policy on surplus aircraft, the maintenance of a healthy aircraft manufacturing industry, and strong expanding air commerce.

Ward reflected the general view of the other witnesses when he said it was his opinion that the Secretary of War and the Secretary of the Navy will require extreme flexibility for the procurement regulations under which they are to operate if the national need is to be met.

Contract Change—L. D. Brill, president of Bell Aircraft, emphasized more latitude for the Army and Navy in future military aircraft procurement, and urged a change in the present cost-plus-fixed-fee contracts in develop-

ment programs. He said that production programs and research programs should be very carefully balanced, and aircraft production should at all times be based on the most advanced engineering and research of which the industry is capable. He commented that it is extremely important to the aircraft industry that the countryback provisions of the present law be retained.

AVIATION CALENDAR

- Oct. 10—National Council, 1700 at National
- Oct. 10—U.S. Army Air Corps, 1700 at National
- Oct. 10—U.S. Navy, 1700 at National
- Oct. 10—U.S. Coast and Geodetic Survey, 1700 at National
- Oct. 10—U.S. Bureau of Aeronautics, 1700 at National
- Oct. 10—U.S. Department of Commerce, 1700 at National
- Oct. 10—U.S. Department of Defense, 1700 at National
- Oct. 10—U.S. Department of Education, 1700 at National
- Oct. 10—U.S. Department of Health, Education and Welfare, 1700 at National
- Oct. 10—U.S. Department of Housing and Urban Development, 1700 at National
- Oct. 10—U.S. Department of Labor, 1700 at National
- Oct. 10—U.S. Department of State, 1700 at National
- Oct. 10—U.S. Department of Transportation, 1700 at National
- Oct. 10—U.S. Department of the Interior, 1700 at National
- Oct. 10—U.S. Department of Justice, 1700 at National
- Oct. 10—U.S. Department of Agriculture, 1700 at National
- Oct. 10—U.S. Department of Energy, 1700 at National
- Oct. 10—U.S. Department of the Environment, 1700 at National
- Oct. 10—U.S. Department of Veterans Affairs, 1700 at National
- Oct. 10—U.S. Department of Social Security, 1700 at National
- Oct. 10—U.S. Department of Public Health and Human Services, 1700 at National
- Oct. 10—U.S. Department of Housing and Urban Development, 1700 at National
- Oct. 10—U.S. Department of Labor, 1700 at National
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- Oct. 10—U.S. Department of Transportation, 1700 at National
- Oct. 10—U.S. Department of the Interior, 1700 at National
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- Oct. 10—U.S. Department of Energy, 1700 at National
- Oct. 10—U.S. Department of the Environment, 1700 at National
- Oct. 10—U.S. Department of Veterans Affairs, 1700 at National
- Oct. 10—U.S. Department of Social Security, 1700 at National
- Oct. 10—U.S. Department of Public Health and Human Services, 1700 at National

Aeronautical progress will lag, Leroy R. Grumman, president of Grumman Aircraft, told the committee, if some method is not found to provide adequate financial assistance to carry on necessary research and development.

Points Agreed—Harry T. Rowland, first vice-president of The Glenn L. Martin Co., said the thinking of the industry runs closely parallel on the importance of private aircraft research, development, manufacturing ability and potential to our national defense.

The tremendous applications of such advanced weapons as the atomic bomb and guided missiles, he added, place more of a burden than ever upon both public and private science to develop improved methods of employing them and defense against them.

Alfred Marcher, president of Republic Aviation, told the committee that the people of the United States are at the point where they have to make an important decision. They can, he added, emancipate our airpower in being, force retention of airplanes that, though only a few months old, are already obsolete, or nearly so. Or, they can look facts in the face, realize that it costs something to keep a piece as well as to win it, and give to their Congress and their Army and Navy the mandate to keep strong and modern and elastic.

National Aviation Clinic Sets Four Main Topics

Program for the National Aviation Clinic in Oklahoma City Nov. 21 will cover four general divisions of aviation and its related interests: aircraft manufacturing and its allied activities; air transportation, including major airlines, feeder systems and chartered services; private flying, and national air defense.

Stanley Draper, chairman of the Clinic executive committee, has announced four of the speakers, in addition to President Truman who will deliver an address at the opening session.

Charles E. Wilson, president of General Motors, will speak at the banquet. At the two clinic luncheons, speakers will be Vice Admiral Marc A. Mitscher, deputy chief of Naval Operations, Air, and Land; Gen. Ira C. Baker, Lieut. Gen. James H. Doolittle will address one of the principal sessions.

AAF Reveals Accident Study To Guide Lightplane Safety

Office of Flying Safety report on details of liaison plane mishaps during 2,000,000 flying hours, studied closely by branches of private flying for application of "lessons" to civil aviation.

By WILLIAM KROGER

Based on more than 2,000,000 flying hours with liaison planes, the Office of Flying Safety of the AAF has released a detailed report of causes and factors in 2,400 major accidents that is being studied with the keenest of interest by those concerned with private flying.

This survey constitutes probably the greatest array of data ever compiled on accident hazards in the type of aircraft commonly used by pilots flying for pleasure.

Being noted for possible application to private flying are these AAF facts, all arising from operations only within the U. S.

1 Error was the principal factor in all of every five accidents.

2 Error on the part of ground or maintenance personnel was a factor in 21 percent.

3 Failure of the equipment figured in 21 percent, with power plant failure a cause in 12 percent of the accidents.

4 There is a tendency for pilots not to take the lightplane seriously, it is feeling that "it is safe to take a lightplane because it is a light, maneuverable type of aircraft."

Aircraft used by the AAF, and on the operation of which the figures are based, were Vultee L-1, Taylorcraft L-3, Aerostar L-3, and others. The figures are based on 2,400 accidents occurring during liaison aircraft operations in the year for which liaison information was supplied, July, 1944, to June, 1945, for more flying was done by the Army in liaison types of planes, than by civilians.

During that period, the AAF used an average of 1,500 liaison planes, with 318 major accidents. There were 71 minor accidents for every 100,000 hours in liaison aircraft, compared to 42 for the AAF as a whole. There were 25 liaison aircraft wrecked per 100,000 hours, compared to 13 for all AAF aircraft.

With thousands of service pilots returning to civilian life, many of whom are expected to continue flying in lightplanes, one prime task emerges from the AAF accident study.

Better than 88 percent of the pilots involved in liaison accidents in the 1944-1945 period, had less than five hours experience in the model aircraft involved.

Perhaps significantly, the next highest rate was among pilots with from 101 to 200 hours experience in the model aircraft involved.

Errors on the ground, and failure of the equipment, principally involved in the statistics on accidents in other phases of flight. Twenty percent of the 1944-1945 accidents occurred during forced landings, the great cause of which was engine failure—responsible in 30 of the 44 forced landings. Many of the engine failures, however, were attributed to faulty maintenance.

Notes Disclosed—A surprisingly large proportion, 18 percent, of accidents occurred during landing. Manufacturers can note the reason: the difficulty of obtaining forward vision in the aircraft made it necessary to "dig-in" or "taxiing," and at weekend. Why? The reason was not clear, collision with obstacle or other obstacles generally resulted.

Remarks—Accordingly, the report states a conclusion that is essential to provide argument. If those should not be an improvement in the private aircraft accident rate,

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Accident List

The following percentage comparison of types of accidents in liaison planes, and in other types of Army aircraft, was compiled by the AAF Office of Flying Safety.

Accident Type	Liaison Aircraft	Other Aircraft
Collision with obstacle	2.0	0.8
Collision with aircraft	0.8	0.8
Loss of control	10.0	10.0
Engine failure	30.0	30.0
Procedural error	18.0	18.0
Human error	21.0	21.0
Weather	1.0	1.0
Other	1.0	1.0
Total	100.0	100.0

craft or other obstacles generally resulted.

"The aircraft manufacturer," states the AAF report, "has the task and duty of building an airplane which will not fail, but one which will also remove as far as possible the difficulties of flying and the opportunities for pilots to make mistakes."

The conditions of AAF liaison plane operation, and the conditions under which private flying will be conducted are similar, the Office of Flying Safety believes. "Unsafe aircraft designs, improper maintenance, poor regulation of traffic control, careless personnel, improperly trained pilots, difficulties of weather and navigation—these and other basic accident causes present regardless of whether the operation is military or civil."

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LATE GERMAN SPEED CHALLENGE:

Capable of climbing to 30,000 ft. in 7.5 seconds and developing a speed of 385 m.p.h., the Messerschmitt Me 163 was the fastest aircraft of the war. It was capable of achieving the highest speed category of propeller driven craft. (Aerostar's newest propeller driven fighter, the Navy's Sea Fury, is listed for speeds about 400 m.p.h.) Powered by two 12-cylinder inverted "V" liquid-cooled engines of 1,700-hp, the Me 163 was used as a two-place fighter-bomber with three cannons, fitting it for heavy fighter, fast bomber, and long range reconnaissance assignments.

Training Aid

Better training procedures for lifelineless operations are indicated by the AAEP's report of mission plan accidents. "The fact that fatalities continued to be a considerable number of accidents is evidence of the importance of adequate instruction," the report states. Recommendations include standard instruction and uniform training literature.

and if personal plane use should expand as expected, "specifically, with 300,000 private aircraft operating an average of 20,000 miles per year, there would be an annual total of 60,000 private aircraft accidents."

General Staff Backs AAF Peace Buying

The Army Air Forces will have full backing of the general staff as any plans for an intensified research program, larger procurement than previously in peacetime, and more voice in Army affairs, it is indicated in the biennial report of General of the Army George C. Marshall.

However, in his recommendations for the defense of the U. S. Gen. Marshall seems to throw cold water on the separate air force idea. "The Regular Army," he says, "must be composed of a strategic force, heavy in air power, partially deployed in the Pacific and the Caribbean ready to protect the nation against a sudden hostile thrust and immediately available for emergency action and reorganization."

Commercial Stress—In pointing out the necessity for research, the report traces the link between civil and military aviation. "Many of the aerodynamic principles that helped give this nation the greatest air force in the world grew out of commercial development and our production know-how at the start of this war was partially the fruit of peacetime commercial enterprise."

The AAEP's repeated efforts to extricate itself from the embarrassing position of seeming to be second to the German development of jet planes and rocket propulsion find support in the section of the report dealing with weapons.

Earlier in the document, Gen. Marshall quotes Gen. H. H. Arnold saying that "when World War II began we had no rockets." This is cited by Gen. Marshall as the fact that "between the two world wars we permitted Germany to far outpace us in the development of instruments which might have military use."

Jet Endurance—Germany first

introduced the jet engine in combat, it is conceded "but not because we had made no progress in this field.... The German jet fighters were built to a maximum endurance of a little over an hour. Ours already had the endurance to fly nonstop from San Francisco to New York." Gen. Marshall does not state if such a fight has actually been made.

Avco Disposition Of AA Stock Seen In Wake Of CAB Action

Board's show-cause order regarding 22 percent holding in American expected to precipitate move; sale would follow corporation's growing diversification trend.

Prodded by a CAB show-cause order issued last week, Aviation Corp. will probably dispose of its holdings of 367,838 shares of American Airlines stock. This move will materially strengthen Avco's financial position, and is in line with the holding company's policy of diversification into non-aviation activities.

In its order last week, CAB found that Avco's 13.26 percent holdings of AA common stock constitute control of the carrier within the meaning of Section 494 of the Civil Aeronautics Act, and that such control has been acquired since passage of the Act.

Trust Ends—Further, it took cognizance of the fact that the agreement under which Avco's AA stock was held at trust by Jesse H. Jones is due to end with the termination of the national emergency, termed "reasonably imminent." At that time, the voting powers of the stock would return to Avco. Accordingly, the Board instructed Avco to show cause by today why it should not be ordered to divest itself of AA control by reducing its voting stock to not more than four percent of the stock outstanding.

Such divestment would have to be completed by July 31, 1946. Meantime, the corporation would have to file monthly reports, up to statement of position on the amount of stock disposed of and still held.

The American Airlines investment now is carried on Avco's books at \$1,397,123. At current prices of about 90¢ per share, this stock has a market valuation of \$326,903,484. Under current circumstances, this profit of \$21,505,327 is subject to a capital tax of 23

percent. Tax experts assert, however, that if Avco sells its stock under CAB orders, no capital tax will be liable.

Profit—In any event, assuming the very word of the tax matter in this respect, Avco at current market prices, stands to show a net profit of at least \$15,905,000 in disposing of its American Airlines stock.

Informed sources look for Avco to further dispose of the 366,934 shares of 8 1/2 percent of Pan American Airways stock it now holds. This investment, earned an Avco's books at \$1,348,151, has a current market value of around \$21 per share of \$7,703,334. Allowing for a 28 percent tax, a net profit of around \$4,790,900 would result from this sale.

It is obvious that these moves would materially improve the book value of Aviation Corp.'s equity as the balance sheet would reflect the cash received from the sale of the entire shares.

New Growth—Avco, however, may expend such cash as rapidly as it is received. The company is broadening out into non-aviation fields. This is evidenced by the purchase of 10 percent of the stock of Chrysler Corp., and a substantial interest in the New Idea Co., manufacturers of farm machinery. (AVIATION NEWS, Oct. 5)

A few months ago, a \$5,000,000 three year contract was negotiated by Avco and is now plans to substitute for such bank credit, an issue of \$15,000,000 convertible preferred stock to be sold to common stockholders through rights. As far as can be determined, Avco will most likely retain the 418,417 shares or 59 1/2 percent of

the common stock of Consolidated Valves Aircraft Corp. This holding is carried on the books at \$5,269,314 but with the stock selling around \$25 per share, has a market valuation of \$10,368,425.

Yield—The Aviation Corp. referred to last financial impact and strength from the aviation industry, but its present diversification process clearly discloses entry into other industrial fields with aviation assuming a progressively smaller role in its fortunes. Some quarters expect Avco to change its corporate name to reflect the broadening activities.

Airpower Emphasis Sought For Navy

Air operations chief stresses aircraft aspect as Navy weighs carrier role.

Carrier-based air "proved beyond the shadow of a doubt that air power and sea power are one and the same thing," according to Vice Admiral Marc A. Mitscher, deputy chief of Naval Operations for Air, in a statement of particular interest in view of current discussions in Washington as to the place of the carrier in the post-war fleet.

One report held that the Navy's plans for its post-war fleet allocate a secondary position to aircraft carriers. A Navy spokesman, however, denied that carriers would be relegated to a secondary role and added that the ratio of carriers and battleships, when compared to the pre-war Navy, would show an increase in favor of the carrier.

A report submitted to the Naval Affairs committee by Secretary Forrestal shows the active fleet would include 13 battleships, 13 aircraft carriers, including two 63,000-ton carriers, and 21 escort carriers. The last-up reserve would include seven 41 battleships, 22 escort carriers all built since 1940 and 58 escort carriers, all new since 1940.

The admiral, speaking to members at Annapolis, commented that there is no new principle of naval warfare involved in carrier warfare. The carrier's place ranges, he said, is 125 to 300 miles while the maximum range of our longest main battery gun is approximately 15 miles. Consequently, he added, the carrier is not the weapon of offensive action against the enemy.

Self-Defending—Further, as Admiral Mitscher pointed out, these more carrier planes defend themselves against enemy attack while en route to the target, and at the same time take offensive action against enemy aircraft without destruction of our own forces.

Such enemy planes as may pierce the offensive-defensive screen of aircraft are brought down

by fire by the carrier and its supporting vessels whose function is the defense of the carrier.

Admiral Mitscher said, "In short, the carrier-based plane is the present day medium for manifesting the principles of naval warfare."

Tonnage's Plot—Looking ahead to the Navy of tomorrow, Admiral Mitscher told the midshipmen that "we must not let the



He-162 is secret no longer



Pickback jet for the People's Fighter



GOERING'S SECRET WEAPON REVEALED:

Germany's air marshal, with characteristic optimism, called this Heinkel 162 jet-propelled, single-place fighter, pictured here for the first time, "one of our foremost secret weapons," when it first appeared in cockpit on April 6, 1945. Called Volkswagen, People's Fighter, the plane was used to split bomber formations by virtue of a rate of climb that hit 10,000 ft. in six seconds, at that altitude the He-162 cruised at 520-mph. Thin-tailed, the plane was marked particularly by the redlined "Goering" monogram of the BMW 003 turbo-jet engine and an unusual 55 degree angular downturn of the wing tip. Fast, unclouded, poor rate-of-turn was featured. The jet was rated at about 1,700-lb. of static thrust—corresponding to about 555-hp. at 125-mph or approximately 2,000-hp. at 540-mph. Details: Span—31-ft. Length—36-ft.; Wing area—123-sq. ft.; Horizontal tail area—31-sq. ft.; Gross weight—3,593-lb.; Service ceiling—39,433-ft.; Sustained high-speed—320-mph; Range, maximum fuel economy—242 miles

moment less sight of the fact that our carrier supremacy defeated Japan and that carrier supremacy should be maintained. . . . Carrier supremacy is not the application of airpower alone—it is the well considered, integrated team of air-surface-ground forces working towards the same objective, destruction of the enemy. . . .

Under present Navy plans, the number of large carriers would be cut to less than a third of the present total fleet or building, while the number of battleships would be reduced only about half. Discussion of these plans by top admirals is frowned upon by top

Navy officials who look to battleships as the prime unit of the fleet. Proponents of air power both within and outside the Navy are hopeful that Congress will give some time, in pending hearings, to their views.

Col. H. E. Hartney Dies After Long Air Career

LT. COL. HAROLD EVANS HARTNEY, World War I flyer and later a prominent figure in aeronautics, died in Washington, D. C. of heart disease, on Oct. 3. He was 37 years old.

At the time of his death, Col.

Hartney was an aviation consultant. Previously, he had been adviser to the CAA and to a Senate committee investigating air safety. Born in Canada, he joined to fly with the Royal Flying Corps during the first World War, and was later sent to this country to train American flyers.

His life's associates—He went back to France and was commander of the First Pursuit Group, a squadron of which was commanded by Capt. Eddie Rickenbacker. Following the war, Col. Hartney was executive officer for Gen. William Mitchell, and was in charge of training of the Army Air Service.

A crusader for aviation progress, Col. Hartney was one of the founders of the National Aeronautic Association and other groups to promote aeronautics.

Jap. U.S. Features Joined in Bearcat

Maneuverability of Jap designs, power and armor of American planes combined to give Navy a "400-mph. plus" fighter.

Real secret of the Grumman F4F Bearcat fighter (AVIATION News, Oct. 8), according to the Navy is that Grumman and the Navy have combined in it the best features both Japanese and American fighters.

It combines the light weight and consequent excellent maneuverability and climb of Jap aircraft with the high horsepower and armor and toughness of previous Navy fighters.

► **Key-Ship**—The Bearcat bears a close kinship to the F4F Hellcat and the F3A-2 Wildcat. Like them, it stresses high horsepower and toughness. The F4F is powered by a single-stage Pratt & Whitney 2600-C Double Wasp engine which turns out 2,100-hp under military rating and better than 2,600-hp with the aid of water injection.

Yet it is about 1,000-lb. lighter than the Hellcat with its 2600-B 2,400-hp engine and only a little heavier than the 1,335-lb. Wildcat.

The new plane's powerplant turns a four-blade Aero-Prop propeller which the Navy reports is lighter in weight and simpler in construction than previous comparable propellers.

The Bearcat combines recognition features of both the Hellcat

Air Coordination

Nylon Tracy, former acting director of Aircraft Resources Control Office, has joined the Air Coordinating Committee as secretary. The committee is not departmental and composed of the Undersecretaries of State, War, Navy, and Commerce departments and the chairman of the Civil Aeronautics Board. Theodore P. Wright, Civil Aeronautics Administrator, acts as executive secretary.

This committee of five proposes the national aviation policy so far as the five government agencies are concerned. Under a memorandum of the Secretary of War their functions are to:

1. "Coordinate existing problems and developments affecting more than one department or agency, and to coordinate activities of government departments and agencies interested in this field and recommend integrated policies for any action by the department represented on the committee or by the President or any other government agency charged with responsibility in the field, all in accordance with and subject to the provisions of any general or subject applicable federal statute."

and the Wildcat. Like the F4F it has a low mid-wing. Like the F3A-2 its nose is round, its wing unswept with dihedral from the roots. From above the F4F might be mistaken for the Wildcat, but both wing and tail surfaces have a more pronounced taper, and the tailplane lacks the bite found in the older Grumman planes.

► **Compact**—The F4F is more compact than either of its predecessors. Its wing span is smaller than that of either the Hellcat or Wildcat. The short span makes quick banks easy, and together with light weight and the aid by blades of air-injection make possible extreme maneuverability.

Despite the fact that the war is over and that restrictions are supposedly off, no detailed specifications on the Bearcat were released by the Navy. It was announced that the new level speed is more than 400-mph., a speed "believed to be the fastest in the world at this altitude for propeller driven aircraft." The plane climbs over 3,000-ft. a minute with the aid of water injection and its ex-



New Views of F4F "Bearcat": This lightweight, high-powered fighter, built by Grumman for the Navy, is smaller than its close kin, the Hellcat and Wildcat. Consequent lower drag makes it possible to put more aboard carriers, and the high horsepower makes it possible for them to take off with almost zero wind coming over the flight deck. The aerial 10 knot used by most shipboard fighters has been a handicap to escort carriers.



tree's range under ferry conditions is 1,500 miles.

Canadian Surplus Plane Sales Listed

Early aircraft were sold last month by the War Assets Corp., Canadian government surplus disposal agency, for a total of \$121,829.

Ten of the planes, five Anson IV two-engine transports, three Hudson VI and two Hudson III two-engine transports, were sold to Aeromarine de Mexico, TACA Airways, and Transportes Aereos Mexicanos, for use in Mexico and Costa Rica. This brings to a total of 289 the number of surplus aircraft sold by the corporation outside of Canada, since its inception in April, 1946.

► **Other Sales**—Aircraft sold in August also included one Anson IV, six DeHavilland Tiger Moths, one Stearman flying boat—1 to St. Louis Air Transport for use in the West Indies, 21 Cessna Crane two-engine aircraft and one Panchard 240s transport.

Royal Canadian Flying Club Association bought the Tiger Moths, Cessna Crane and Fairchild Other Canadian purchasers were Lauriaton Air Service, Ottawa, Superior Airways, and Johnstone Flying Service, Winnipeg.

The corporation sold 23 surplus engines in August including five Jacobs 1652X, 14 Pratt & Whitney Wasp Jr., three Wright Cyclones and one Gipsy Major. Engines and other aircraft equipment sold during the month totaled \$184,833.

► **Income Tally**—Total aircraft and components sales by WAC from April, 1946 to Aug. 31, 1946, amounted to \$3,339,000, of which \$1,261,476 was for 793 aircraft, and \$1,846,308 was for aircraft materials.



GERMAN FLETTNER HELICOPTER:

This unusual design, the FL 282, is a single-seat helicopter which was used as an artillery spotter, working with tank spearheads and as carrier aircraft. The two-blade rotor—flat blades—rotates clockwise, independently separate rotor boxes turn in opposite direction and are inclined away from each other. Craft is powered by a 150-hp 50-hp engine. Externally mounted fuel tank has 25 gallon capacity. In forward flight, glide speed 16,346 kilometers per hour. Large total vertical tail surface area is required to directionally stabilize the short fuselage in forward flight. Some of the large horizontal tail surfaces.



New Lightplane Materials Era Seen By Aero Science Group

lecture of the Aeronautical Sciences meeting marked by agreement of engineers and executives on outstanding fabricating construction and replacement by all-metal fabrication.

By ALEXANDER McSURELY

The era of the prewar lightplane, manufactured out of steel tubing and stressed fabric, with a welding torch and a pair of scissors, appears to be rapidly drawing to a close.

Death-knell for the steel tubing-fabric airplane was rung, not too mournfully, at the recent two-day Lightplane Meeting of the Institute of the Aeronautical Sciences, in Detroit.

Other trends reflected in papers and discussions included:

► The replaceable plane is not to be pictured out of the personal plane picture, but is still being seen from production.

► The low-wing monoplane came out winner over the high-wing, an argument which still left the high-wing advocates some points of merit.

► VHF personal plane radios hold out bright future hopes to the private flyer.

Chief "down-line" engine" for the fabric-tubing method of construction were Alfred Marcher, president of Republic Aviation Corp., and F. B. Lane, engineer of

the Engineering & Research Corp., who presented papers, respectively, on production methods and testing for all-metal aircraft, and the most desirable materials for personal aircraft.

It is not surprising that these two men, whose companies make the Republic Seabee amphibian and the Freeway, among the leading examples of metal construction, should have taken such stands, but the complete lack of argument from engineers of other companies, which currently are rolling out fabric-tubed airplane planes as fast as they can, was the best indication of how far this all-metal construction trend has already gone.

► **"Thick Skins"**—Elimination of many of the bulkheads and supporting members, now used in conventional all-metal fuselage and wing construction, by use of "thick skin" coverings of magnesium for the wings and aluminum for the fuselage, which can support the loads without much internal bracing, is being seen as a likely future trend.

Metallic beryllium, he believes, would be the ideal aircraft material, but because of its cost, new production, he does not expect its use to be common. Using beryllium, a fuselage could be produced which would satisfy all strength requirements and yet weigh half as much as its equivalent in aluminum, he believed.

He believes that wartime developments of anti-corrosive for magnesium will make possible this material's use to a far greater degree than heretofore. As an example of thick-skin construction he showed a sketch of a wing with a single spar and no rib structure which satisfied all strength requirements due to the strength of the thick magnesium covering.

► **Weight**—Volaris pointed out the total weight of metal used in an all-metal plane was 390 to 400 pounds, costing 60 cents a pound, for aluminum. The balance of the plane's cost is in fabrication and accessories and it is better the designer make it as the personal plane is to drop its price to reach a real mass market. His company, he said, expects to produce as many as 100 to 500 airplanes a day when full production is reached.

The Republic president startled the meeting by the announcement that Republic can produce the Seabee for 68 cents a pound, including all loads and reserves. At this figure he said, the testing would be paid for in the first year.

His company has planned a production schedule of 5,000 planes a year. Using modern tooling and all-metal construction, which is designed for such production, the Republic president contemplates possible future production of a \$2,500 four-place amphibian, an \$800 four-place landplane, and a \$1,200 two-place landplane which would have a good cruising speed and a 100-hp. engine. He gave no indication that his company was planning such a program, however.

► **Hen Coles**—Marcher emphasized the need for reduction in cost of accessories and parts, and pointed out that differences in weight are over-emphasized. An aircraft engine distributor, which weighed only four ounces less than an automobile engine distributor and would perform the same function, cost \$8 more, he said. A radio for the Seabee has been obtained for \$98, although the original figure for this accessory was \$300.

Replaceable personal planes come in for three-way emphasis

► **George Spurr**, developer of the Spratt convertible wing, now being flown on a four-wheeled roadable type fuselage, described flight experiments with this plane and with earlier flying boats which used the same type of wing. The wing he said had been designed so it could be folded or removed from the "normal joint" above the fuselage which is at its only point of attachment. This would make possible the use of the fuselage as a monomobile. Controls remain with the same "feel" whether the craft is flying or on the road, he said.

► **John Getz**, assistant to the CAA Administrator, wrote his quotation in the high-wing low-wing debate arguing the importance of high wing design for roadable planes, and for types like the Spurr design, which obviously could not use low-wing design.

► **Benjamin Rosenberg**, Canadian, criticized the critics, stressed advantages of four-wheeled low-wing design for roadable planes and reported results of a study on riding comfort of a roadable plane as a monomobile, vs. shock absorbers and landing gear. He indicated one possible design compromise would make possible a shift in the center of gravity when in riding comfort of a roadable plane as a monomobile, vs. shock absorbers and landing gear. He indicated one possible design compromise would make possible a shift in the center of gravity when in riding comfort of a roadable plane as a monomobile, vs. shock absorbers and landing gear.

► **Alison**, consulting engineer, who led the campaign for low-wing personal plane design with his paper on this subject cited superior vision, better crash protection, low center of gravity, and advantages in ease of construction, as favoring the low-wing. He urged elimination of the high-wing type, and standardization on the low-wing for personal aircraft.

► **T. Segert**, Low Inc., aviation radio sales manager, speeded for a setting of new standards for approved technical features in aircraft radio and for better job care and understanding of equipment. He predicts a trend toward 12 volt systems in single-engine planes and 24 volt systems in two-engine planes. Small, thin, feather-light antennas can replace current antennas with the advent of VHF, he said, and urged importance of more adequate mechanical care of radios, in installation, shielding, and in periodic preventive maintenance overhauls.



LOOKING AHEAD:

While Piper Aircraft Corp.'s immediate production models are essentially short pre-war, three-place Super Cruiser and two-place Cub Trainer, the Lock Haven, Penn., company is planning the experimental four-place Skywagon, shown above in a new drawing, for a next year production model. The plane, previously described in Aviation News, Jan. 29, has a design cruising speed of 125-mph, with a 165-hp engine. An original price plan of \$2,500 is expected to increase as a result of labor costs. The Skywagon prototype is reported in final assembly.

Big AAF Stinson Unveiled; All-Metal

Commercial interest centring on current, larger, single high plane, cargo, pickup, seat ten.

Largest liaison lightplane yet developed for the AAF, the new Stinson XL-13, announced last week, which can carry as many as six passengers in an overhead arrangement, is also the first all-metal military lightplane. It has a number of interesting features, with possible application to civilian lightplane designs.

The XL-13 has a 41-ft. wingspan, 6-ft. height, and the wing of the Stinson XL-13, to which it is the design successor. Wings are slotted and flapped, and are designed to be folded so the plane can be carried on a 24-in. truck assembly.

► **Full Power**—A 365-hp. engine drives a wooden-blade controllable propeller, and the cockpit is fitted with dual wheel controls and complete blind flying radio equipment.

Special features of the XL-13 also include:

- **Exit** for two persons, in dash-in-door lock of right side of plane.
- **Removable** panels in fuselage so that cargo may be dropped from cabin door.
- **Hatch** in cabin floor for cargo pickup, and a canvas hatch.
- **Plane** is of conventional high-wing monoplane type with fixed landing gear, and rounded planform canopy.
- **A monocoque** tailcone supports the empennage. Wings are of unusual profile, with leading and trailing edges parallel at the base.

while building edges taper sharply near the wingtips.

► **Useable**—A spandrel arrangement on the landing gear vertical struts makes it possible for the plane to be loaded, trailer-towed, by a jeep.

Folding wings have long been considered one solution to the heavy storage problem, and a civilian plane which could fold its wings, for transportation by truck or to be towed along a highway behind the family automobile, has obvious advantages.

The XL-13 is the first lightplane design, which Stinson has produced with all-metal materials, and as such is the military successor of the experimental all-metal Stinson civilian planes.

NATA Action

A meeting of the board of directors of The National Aviation Trades Association, expected to be called at Indianapolis, Ind. 25, is the first indication in several weeks of an effort to revitalize the organization.

It is reported that Roscoe Turner, NATA president, may submit his resignation at the meeting.

The association has not yet named an executive director to take over the duties relinquished by Clarence H. Mearns, and it is understood that John H. Wilson, former executive director, has definitely declined himself "out of the picture" as far as new job concerned. There has been no action to move the NATA of New York Kansas City to Washington, D. C., as was announced at an August meeting.



AIR SALES TOUR:

Using the Howard plane shown, and a twin engine Cessna to transport its executives, the Wilson-Guy Corp., manufacturer of the Recradio radio-photograph, is conducting regional distributor meetings at Chicago, Salt Lake City, Oklahoma City, Atlanta and New York. Led by W. L. Hammer, vice-president in charge of sales, the executive group is using planes chartered from Hughes Flying Service, Lansing, Mich. The time-saver factor provided by chartered executive planes for such trips offers an interesting sales argument for other charter service flight operators.

Swift Production Sets Tooling Pace

Newly unveiled two-place Globe lightplane produced with an hand-made parts in common surface.

The rapid emergence of the lightplane into mass production consideration, is highlighted in the disclosure that the newly unveiled post-war (Globe Swift) contour surfaces do not contain a single hand-made part.

Described by the company as the "very first" all-metal lightplane to be produced by this tooling method, the new Swift is coming off the Fort Worth line headed toward a market that in-

cludes a stated order backlog in excess of \$10,000,000. Distributors tips covering the entire U. S. and parts of Mexico and South America have been established or are in the negotiation stage.

► **Output Rate**—Present plans call for 4,000 Swifts to be ready for delivery by the end of 1946.

Backing up the mass-production houses of the company are a string of owner-convenience features indicative of the growth of the lightplane to a point where it must recognize such "appeal" as have the automobile designers.

► **Comfort** as stressed in the two-place, 42-in. wide cabin, seats are entirely cushioned by foam rubber and a ruying block is provided between them to eliminate

the cross necessary rolling of upholstery by seat and passenger laboriously climbing into their plane. Wing exitwalks provide access through the sliding panel of the 360 degree vision canopy.

► **Soundproofing**, more than a half inch thick, seals the cabin and the canopy's top panels are tilted to shield the flyer from sun glare.

► **Engines** offered are the four-cylinder 88-hp, or the six-cylinder 125-hp Continental. Both are available with either carburetion or fuel injection. Fuel is fed from two fifteen gallon wing tanks tipped into a common trap on the centerline for equal consumption and resultant constant lateral trim.

► **A twelve volt electrical system** includes a spill-proof battery, engine driven generator and navigation and position lights.

► **The panel is removable** as one unit with clamped girders ready for introduction of new instruments and radio.

► **Crising speed is listed at 125 mph**; six hour range, and takeoff is said to require 350-ft. into a 12-mph wind.

Giant Airpark

Conversion of Seaside's King County Airport (Boeing Field) from a major air terminal to a giant airpark capable of housing and servicing more than 2,000 personal and charter aircraft is an immediate prospect.

Ernest Clark, airport manager, has begun a survey of the airport preliminary to the construction of a grandstand, taxi hangars on the field's periphery.

► **Hanger Estimate**—King County commissioners believe that small hangars of freepiped construction can be built at a cost of not more than \$1,500 per unit and can be rented for from \$15 to \$30 a month to be self-liquidating in eight to ten years.

Actual conversion will begin when major airlines move to the new Seattle-Tennoa New Lake Airport. The move will be made as soon as temporary building facilities are installed.

The King County Airport manager already has received applications for space for aircraft show rooms, sales offices, hangars, technical shops, schools and charter facilities. Consolidation also is being given to the use of a portion of the field for air cargo operations.



OCEAN-SHRINKER -- 45 Tons of Speed

On May 20, 1927, a young unknown named Charles A. Lindbergh climbed into a tiny monoplane at New York and 33 hours and 30 minutes later landed at Paris, France. Immediately he became a world-wide hero.

But on August 1, 1945, the ATC's C-69 Lockheed "Constellation" made a casual 3,600 mile N. Y. — Paris flight in 14 hours and 12 minutes breaking all trans-Atlantic transport records. Yet this hardly rated a mention in the newspapers.

The progress of aviation is so swift that new records are made almost daily as new designs and greater power plants step up speed and efficiency. Helping the C-69 to this newest record were four great Wright engines developing 2,200 h.p. each . . . and each is equipped with CECO carburetors.

As new records are broken and greater aviation advances are made, Chandler-Evans will continue to use all its war-proved engineering and production resources to keep pace with America's aircraft engine builders.

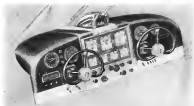


CARBURETORS
FUEL PUMPS
PROTEK-PLUGS



CHANDLER-EVANS CORPORATION

SOUTH MERIDEN
CONNECTICUT, U.S.A.



Globe "Swift" Interior: Moderate instrument panel of the new all-metal Globe Swift, and view of the seating accommodations of the plane show another manufacturer's step forward in "streaming up" plane accommodations for post-war buyers. Starter is a pull-down over the throttle.



PERSONNEL

W. G. Lundquist Named Chief Wright Engineer

W. G. Lundquist, who has been directing the Wright Aeronautical Corp.'s engineering work in the development of a successful gas turbine, has been named chief engineer of the company, succeeding Raymond W. Yates, who was named vice-president in charge of engineering. Lundquist has been with Wright's engineering organization since 1929 and has worked on all their major projects.

R. Sandell Irwin (photo), director of industrial relations service, Aircraft Industries Association, has been named substitute industry member of the National War Labor Board. He will continue to serve part time on the NWLB's National Air Force Panel, of which he has been a member since April, 1944.

James H. Kishida, RCA Vitec Division, aviation section, Radio Corp. of America, was named chairman of the Committee on Aircraft Radio of the Aviation Distributors and Manufacturers Association.

John H. Mueseler has been named director of engineering research in the laboratories of Ethyl Corp. He formerly was chief of the engine laboratory at Chrysler Corp., and for the past two years chief of applied research at Pratt and Whitney Aircraft Division. He succeeds **Earl Berthelson**, who now becomes general manager of the Ethyl research laboratories.

Mal H. H. Peterson (photo) has returned to his position of district sales manager of Pan American Airways in Los Angeles, after three years of duty in handling personnel matters for the Air Transport Council. After one year as acting Southern California regional president, control of the firm was transferred to Brazil, and there received the Brazilian government's high military honor,

the Order Nacional do Cruzeiro do Sul.

NAL Promotes Three; Amos Heads Personnel

National Airlines announces the following executive and managerial



promotions. **D. H. Amos**, formerly assistant to the vice-president in charge of operations, has been appointed manager of the personnel department for the entire line. **L. W. Dymond** (left), chief flight superintendent for National, has been appointed assistant to the vice-president in charge of operations. **P. A. Williams** (right) has been named assistant chief flight superintendent.



John E. Cook (left) has been appointed general traffic manager for



Continental Air Lines. He joins Continental from Brazil Airways where he was general traffic manager. Cook is chairman of the schedule committee in the passenger traffic section of the Air Traffic Conference of America. Continental also announces that **Dorothy Raylander** (right) has been named assistant secretary of the airline. For the past two years she has been confidential secretary to Robert H. Fawcett, vice-president, secretary.

Brazil Airways announces the return of **Mal Langham Reed**, as assistant reservations manager. Reed was with Brazil before going to the Army and served in reservation control at Dallas, which he now heads. **Walter M. Staples** becomes district traffic manager of the Pacific Coast area for Brazil.

T. H. Shewalter (left), for the past three years assistant regional director



of personnel for United Air Lines' western division, has been named regional director of personnel at the company's Cheyenne maintenance base. He succeeds **E. J. Galloo**. **Richard W. Goodspeed** (right) becomes interline traffic manager for United to have charge of the interchange of business with other airlines, railroads and bus companies.



D. B. Martin has been appointed New York City representative of the Boeing Aircraft Co., with offices at Rockefeller Plaza. Martin, who will develop foreign and domestic sales, joined Boeing's engineering division in 1937 and has been manager of the Boeing London office.



Stanley Washburn, Jr. (left), has resumed his post with American Air-



lines, Inc., as confidential director after three years as Air Transport Command. Washburn formerly was New York press representative before becoming national personnel manager. **Robert E. Warner** (right) has been named eastern regional cargo traffic manager for American, succeeding Joseph B. Bowen, who was appointed general freight agent. Warner has been in the cargo traffic department for the past two years.



Dean J. Hazzam (photo), has been appointed director of traffic for the international division of Transcontinental and Western Air, Inc. Hazzam will be in charge of traffic in the 14 countries on TWA's international routes. TWA's existing international routes, under the direction of **R. O. Cooke**, vice-president, traffic, will handle traffic developed in the U. S. for the international division.

"Now you see it—Now you don't... a Machine Shop in a Burma Jungle"



A Tire Strikes... strike of our tireless men in the wild jungle. They work up. Super parts must be built at night. By hand, it takes weeks or even months to get help in that there war zone... and it's for a fixed machine shop. And guess? There it is! A Curtiss Commando, equipped with a complete machine shop... from heavy drill press to welding equipment... a huge

power plant... spare parts... and a crew of mechanics. In recent days, all four engines are running smoothly. The engine is ready for machine work at the same time. And the Commando is off on another round flight "somewhere" to the China Burma India theater. Here's another streamer who pilots itself. When it comes to carrying loads and getting there, it goes to fly Commando!

THAT'S WHY
I WANT TO WORK FOR
THE AIRLINES THAT WILL

Fly Commando!



Over the tops of busy mountains and two airloads easy by the flying machine. That's what that will mean for the airline that fly Commando! When it comes to carrying greater payloads... on the medium-range flights which make up the majority of daily airline loads... the Commando will be first on the list of profit producers.

THE CURTISS

Commando

Today's Great Userless
Tomorrow's Great Airman

Curtiss

Wright

FIRST IN FLIGHT

Aeroback Command almost a necessity for Commando is now to delight your passengers, whether they play bridge, fast as just in it. And the Commando's unusual aerodynamic features coupled with the power of Wright Cyclone Engines, make it much faster than any of today's airplanes.

On the Next Flight stage are shorter when you fly Commando, because the Commando is so ready to use smoothly for easy servicing. Here a mechanic repairs the engine from some door by means of three quick type fasteners. Through that door, he then might reach to check all things forward of the instrument panel, quickly and confidently.

AIRCRAFT INSTRUMENTS

by GENERAL ELECTRIC

REMOTE-INDICATING PRESSURE EQUIPMENT



OTHER TYPES OF AIRCRAFT INSTRUMENTS

Manometers and voltmeters

Position-indicating equipment

Temperature-indicating equipment

Tachometers and tachometers

Oil-level-indicating equipment

Remote-indicating compasses

Electric gyroscopes

ELECTRIC, remote-indicating pressure equipment is meeting such widely divergent needs as the manifold-pressure indication on PT boats and the new pressure-indication requirements of jet propelled planes.

Used for such indications as oil pressure, manifold pressure, and fuel pressure, both differential and absolute, this electric equipment has the advantage that the fluids or gases being measured need not be carried to the instrument panel. This not only eliminates the hazard of broken lines in the cockpit, but also makes unnecessary the installation and maintenance of many feet of tubing and fittings.

As the size of airplanes increases—making greater the distance from cockpit to engine—electric pressure-indicating equipment becomes even more essential. To meet the conditions which these changes in the size and design of aircraft create, G-E engineers will gladly work with you. Apparatus Dept., General Electric Co., Schenectady 5, N. Y.

GENERAL ELECTRIC



PRODUCTION

Boeing Makes New Market Bid With Three Feederliner Designs

Re-entry into smaller transport planning needs end of long inactivity in that field; plans now being circulated stress high wings, fuselage, gear retraction and baggage handling ease as most desirable features.

With its giant Model 277 transport established as a competitor for long-haul trunk airline use, Boeing Aircraft Co. has now framed plans to re-enter the small transport field on the basis of designs for three different feeder or short-haul aircraft.

The company has been inactive in this category of transports since it discontinued production years ago of the 247D, one of the first low-wing, two-engine "modern" transports.

The Planes—Designs now being circulated are for Models 431-16, 431-17 and 431-22. All are rather a departure in post-war designs, affording high-wing, rather than low-wing construction, and with main landing wheels, as well as the nose wheel, retracting into the fuselage. This permits smaller, and cleaner engine nacelles. The 431-17 is powered by four engines, the others by two.

Both of the Model 431's are planned for short-haul operation on trunk routes. Both are to carry 30 passengers, both are 72-ft., 8-in. long. The 431-17, because of the additional engines, has a larger span, 161-ft., as opposed to 94-ft. Cargo capacity is the same, 262 cubic feet, disposed in both models between two holds forward and one aft. Disposable load for the 431-17 is 12,500-lb., for the 431-16, 11,377-lb. Gross weight for the former is 49,566-lb., for the latter, 36,000-lb.

Only apparent reason for the four engines in the 431-17 is to take advantage of safety factors inherent in four-engine equipment. There is little difference in speed. The four engines of the 17 would total 4,900-hp., while the powerplants of the 16 would total 4,550-hp. At 16,000 ft. the 431-17 would cruise at 353-mph., while the 431-16 would cruise at 350-mph. Landing speed for both would be 80-mph.

Operating Cost—The increased power of the 431-17 is offset in the operating costs. The 431-16 could operate most economically, at 10.8 cents per ton mile direct cost for trips of approximately 400 miles. At that distance, the 431-17 direct cost is figured to be 12.1 cents per ton miles. However, the 17's best range is about 590 miles, at which the direct operating cost is calculated to be 12.2 cents per ton mile.

These cost figures are above those for Boeing's other new design, the 437-22, a twin-engine

20-passenger feederline transport designed to operate from Class II airports. Takeoff, over a 50-ft. obstacle is 1,900-ft.

The 437-22 is planned to be 55-ft., 4-in. long, with an 88-ft. span. Gross weight would be 18,173-lbs., with a payload of 5,963-lbs. Because of its contemplated use, its cargo capacity of 236 cubic feet, compares favorably with that of the larger aircraft.

Performance—The 437-22 would have a maximum speed of 240-mph., and cruise at 200-mph., at 8,000-ft. Direct operating cost would result in lowest point, 10 cents per ton mile, on trips of about 290 miles. It ascends gradually to about 10.7 cents per ton mile for a 300-mile hop.

In all three aircraft, an effort has been made to meet the present passenger baggage difficulties. The 437-22 has space for the passenger to store his baggage just forward of the entrance door, which is placed slanting. While as such arrangement is present in the larger types, the smallest of the three cargo holds of the 431-16 and 431-17 could be so used.

Seating arrangements in all three types are flexible. Because of the wheel wells in the sides of the fuselages, there are two passenger compartments, with the in-



ROTOR TEST STAND:

Great test rig now in use by Air Technical Service Command at Wright Field provides a method of studying helicopter rotor performance. Among tests is an endurance run during which the rotor sustains at greater than normal operating speed for 100 hours followed by an hour of rotating at excessive speeds.

servicing space being used for baggage or cargo in the 417-22. In the other two models, most of this space is pre-erected by the wheels. However, in all three types, the forward passenger compartment may be quickly converted into a cargo hold.

Prop Feathering Pump

A new propeller feathering pump has been announced by Pease Products Co., Cleveland. The unit weighs 14-5 lbs and has a capacity of four gallons per minute at pressure of 448-lbs. per square inch or three gallons per minute at 1,200-lbs. per square inch. The pump is designed to operate two out of every 15 minutes at 1,000-lbs. per square inch. A "bleed hole" drilled through

the valve seat permits circulation of oil through the pump when it is lifting or inoperative.

British Export Bids Stress Output Lag

Manufacturers rush to reserve foreign market share with shipments of converted bombers.

While still lagging in production of post-war civil transports, Great Britain is bending every effort to reserve a share in the export market by sending abroad a variety of types of converted bombers.

This is seen as one reason for the recent gift by the U. S. of a C-54 to Gen. Charles de Gaulle. France's provisional leader had

previously been presented an Avro York by the British.

French Commentary—The fact that the RAF Transport Command depended upon U. S. -made transports for most of their continental runs has been such a subject of comment in France that it has been proposed that British manufacturers stage an exhibition of their products in Paris.

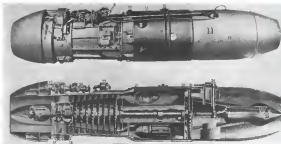
Averse of the fact that the U. S. will soon be in a position to furnish new transports to foreign purchasers, the British are converting their prewar, bombardment types, pending large-scale production of post-war transport designs.

The "civilianized" aircraft are: Short Sunderland, flying boat, to carry 30 passengers; Short Her-



Available in both 12 volt and 24 volt types. All batteries are equipped with special non-spill vent plug and assembled in either hard rubber or rubber-lined aluminum containers. The heavy duty battery has a capacity of 100 A.H. at 5 hr. rate, others have capacity of 25 A.H. of the 5 hr. rate.

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GERMAN TURBO-JET UNVEILED:

After a long term of secrecy, the British Air Ministry has at last revealed detailed particulars on the inner construction of a German turbo-jet unit. The unit pictured above, with identification numbers for the following listing, is the Junkers 094B with an overall length of 12-ft., 8-in.; maximum diameter of 8-ft., 7-in.; weight, 1,285-lbs. (Sketch shows right side and sectional cutaway.)

Points marked:

1. Nose casing
2. Oil tank
3. Entry casing
4. Auxiliary gear box
5. Compressor casing
6. Servo motor
7. Ignition apparatus
8. Cutter casing
9. Attachment points
10. Movable bullet control shaft
11. Exhaust casing
12. Auxiliary fuel tank
13. Fuel filter

14. Injection pump
15. Assembly frame
16. Oil pump
17. Oil filter
18. Oil filter
19. Fuel compressor bearing
20. Speed regulator
21. Compressor rotor
22. Fuel filter
23. Rear compressor bearing
24. Flame tube
25. Combustion chamber nozzle
26. Diffuser grill
27. Combustion chamber
28. Injection nozzle
29. Turbine entry ducting
30. Turbine rotor blades
31. Turbine
32. Forward turbine bearing
33. Rear turbine bearing with oil scavenging pump
34. Movable bullet operating gears
35. Movable bullet
36. Movable bullet support

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P-59 Altitude Record Revealed

An unofficial American altitude record, made by the Bell jet-propelled P-59 aircraft, almost two years ago, has just been disclosed.



Jack Woodson (above), chief test pilot for Bell Aircraft, took the No. 1-VP-59, first production model of the Atomsmoot series, up to 47,000 ft. in a test lane near Maui, Calif., on Dec. 10, 1943. Four months later, the late Maj. E. W. Lewis, test pilot for the Air Technical Ser-

vices Command, reached 47,700 ft. in the same plane.

► **Barcase Story.** At the record-altitude reached by Woodson, one of the General Electric turbo jet engines ran out of oil. "Woodson shut off that jet engine and landed on one power unit. He expressed the opinion he would have reached 50,000 ft. if he had not had engine trouble.

Both of these flights are in excess of the United States altitude record of 44,164 ft. for Lawrence "Doc" Stewart's aircraft set June 4, 1935, by Leach Apollo Records in a Wright Apache. The international record of 50,000 ft. is held by Col. Mario Petri, of Italy, who set the record on Oct. 22, 1934, in a Caproni 161.

line, four-engine bomber, to carry 16 passengers; Aero Lancaster, four-engine, bomber, a nine-passenger luxury version, Handley Page Halifax, to carry 11 passengers.

► **South America.** — The Lancaster is scheduled to be used on Atlantic flights, and to Australia. Perhaps significantly, four of the Swendsen have been bought by Argentine ship firms. Representatives of English plane builders also have been active in Chile.

Mr. Roy Debus, managing director of A. V. Roe, recently made his company his last more than 100 years, and that production of Lancasters (civil version of the Lancaster) is continuing. At the same time, however, the company's post-war transport prototype Tiger II, is already flying. Tiger II is on the way.

Lumber Price Ceilings Revised For Aircraft

All aircraft lumber for which special dollar-and-cent ceilings were established during the war will hereafter be priced under whatever regulation governs sale of the particular species of lumber involved.

The Office of Price Administration asserts that special prices for aircraft grades of lumber will be issued to applicant manufacturers only when they can show the lumber is not of standard grade, already priced under the applicable regulation, and that it is to be manufactured into aircraft parts. ► **Domestic Factor.** — Previously, aircraft lumber manufactured to meet

the requirements of the Army and Navy was priced under MPR 100-aircraft lumber. This regulation was issued to speed production of specially graded lumber urgently needed in the construction of aircraft parts. With the war over, demand for this type of lumber has diminished to the point where the price agency deems it advisable now to place it under regulations operating in greater uniformity with the normal practices of the lumber industry.

Jet Experiments Proceeding Slowly

Work on experimental jet and gas turbine aircraft engines is reported by authoritative industry sources to be proceeding rather slowly, although production of standard jets has been most satisfactory and often above schedule.

Westinghouse is said to be having some metallurgical trouble with test engines in turbine drives for the 18XB jet and, meanwhile, work on the Westinghouse 24-C has not made much headway. Pratt & Whitney is arranging for production of the 18XB-2B engines and expects to make tests early this fall. Current contracts call for delivery of approximately 200 of the 18XB-2B engines by August, 1946. Original contract was for 500, but actually more than 350 were ordered.

► **FR Revisions.** — The Navy is said to have enough 1-10 engines on hand for the Ryan FR-1 Fireball and this has resulted in revisions of that program for both General

Electric and Allison. GE delivered more than 50 of the 1-10-6 gas-turbine burning jets to the Navy in August, 1945 above schedule. The FR revision resulted in cancelling half of the more than 400 1-10's on order from GE. All engines on this order now have been delivered.

Allison delivered five 1-10's in August. Work on the 1-20 is understood to have been already terminated.

Bellanca Skyrocket Built In Dominion

Northwest Industries Ltd., Edmonton, is now making the Canadian-built Bellanca Skyrocket (AVIATION News, Oct. 1) which will sell in Canada for \$21,000 on wheels less engine. The engines will be reconditioned used pre-war plants and will sell at approximately \$3,900.

Standard equipment on the airplane is covered in the price and includes landing lights, extra doors, baggage compartment, directional gyro, extra gas tanks and gyro horizon. 500 wheel landing gear, Kato floats and radio are extra.

► **Details.** — Specifications of the aircraft include a payload of 2,010-lb. G. tanks carry 200 gallons, oil tanks 12.5 gallons. The craft has a maximum speed of 180-mph, cruising speed of 100 and service ceiling of 25,000 ft., a cruising range from 600 to 1,200 miles. Wingspan is 50-ft., 11-in., overall length 27-ft., 11-in., height 8-ft., 6-in., wing area 288 square feet. The plane uses Pratt & Whitney Wasp S3B1 engines rated at 450-hp.

The plane has been used in the past and is now being used in northern Canada and Alaska for freight, aerial photography and surveillance duty.

Bell Engine Order

A contract for more than \$1,000,000 worth of 5-hp, one-cylinder engines for the Warren City Manufacturing Co. of Warren, Ohio, has been received by Bell Aircraft Corp.

The engines, which will be used on the Boxelder, a farm implement which combines the work of a plow and disc harrow, will be manufactured at Bell's Burlington, Vt., plant.

KOPPERS AND AVIATION



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TRANSPORT

Trans-Atlantic Trip Frequency Seen Air Fare Reduction Issue

Unknown commercial operating cost of C-54's also cited as top factor in charge determination; State Department splits allowable six trips per week to England between Pan Am, American Overseas.

By BLAINE STUBBLEFIELD

Passenger fares on trans-Atlantic air services now about to start, will depend extensively on as-yet-unknown commercial operating costs of C-54's and later of Constellation and other civil. They will depend also on frequency of trips.

Pan American Airways last week told AVIATION News that current rate of \$520 could be reduced if they could get authorization for three trips per week instead of two. Further inquiry revealed that the State Department is dividing the six weekly round trips to England allowed this country under post-war agreement, three to Pan Am and three to American Airlines Overseas.

Preemption Upset—Apparently most airline officials had presumed that the six trips would be divided three ways, two each for PAA, American, and TWA. Fact is, however, that TWA stops at Foyat,airo, goes directly to France without touching the United Kingdom, and is therefore outside of the U. S.—British agreement. England has four round trips to the U. S. per week which, of course, are taken by British Overseas Airways.

Not the least factor affecting initial cost of an Atlantic air ride will be skill on the part of operators in blurring the other fellows to lay down low rates over first. One Civil Aeronautics Board source explained that identical rates have been arrived at competitively among some domestic airlines.

If the three Atlantic operators should agree on identical rates before they start, he said it might be called collusion. But if they agreed the next day after one of them published a rate, it wouldn't be—a commercial legality, in his opinion.

Competitive Drop—For instance, if Pan American reduced its rate first, as a result of those trips per week, American and TWA might match the figure, for competitive reasons alone if no other. American Airlines Overseas is charging \$525, the same as Pan Am. The Air Transport Command is charging \$611.

ATC allows 85 pounds of baggage as compared with 55 on the commercial lines, but this difference does not justify the fare difference. Incidentally, the certified operators still were waddering last week whether, if the Army drops prohibition on ATC Oct 15 along with commercial lines, military pay customers will take advantage of any superior military services for instance a direct and quicker hop to Paris.

Flight Costs

Army Air Force fears 60 operational cost per hour of three important military transports—each with a commercial counterpart—above \$327.65 for the Douglas C-54, \$379.35 for the C-46 Curtiss Commando, and \$123.95 for the Douglas C-43.

These are calculated by addition of depreciation per hour on the basis of an average life of 3,000 hours, maintenance material and labor costs per hour, and per hour cost of gasoline and oil. For the three planes these are:

• C-54 — depreciation, \$75; maintenance material, \$10.95; maintenance labor, \$37.95; \$123.95, oil, \$1.65.
• C-46 — depreciation, \$79.94; maintenance material, \$37.13; maintenance labor, \$28.82; gas, \$19.99, oil, \$1.96.
• C-47 — depreciation, \$71.14; maintenance material, \$51.94; maintenance labor, \$39.80; gas, \$19.67, oil, \$1.96.

Total single cost was estimated at \$234.90 for the C-54, \$238.94 for the C-46, and \$161.67 for the C-47. The first is a four-engine plane, the others two-engine.

A Pan American spokesman said his company still aims toward future 6-hour crossings at a fare of \$140 or so. This drastic cut would be accomplished, he



CARGO OFFICERS:

These officers of the cargo traffic section of the Air Traffic Conference, of Air Transport Association group, were named recently at Indianapolis. Left to right: Guy M. Springer, Jr., Bureau of Aeronautics, chairman; Robert E. Whitmer, TWA, vice-chairman; W. A. Weber, Eastern Air Lines, chairman of the section's tariff committee; and W. H. Pichel, TWA, chairman of its standard practices committee.

explained, by carrying a large number of passengers at high speed in his airplanes—such as the Consolidated Model 37, 200-seat plane at 344-mph.

✦ Fleetwide Flaw—All three trans-Atlantic operators have received nearly all of their allotted seats C-64's. All three privately expressed uncertainty as to when they will get their first Constellation.

In addition to foreign services now entering the United States, five have filed application with CAB. They are: Royal Dutch Airlines, Willemstad to Miami, Royal Dutch and Royal Netherlands, Amsterdam to New York, and Batavia to San Francisco, Swedish International Airlines, Stockholm to New York, British Overseas Airways, Trinidad to Baltimore.

The French want to come in eventually, but are among first at Brazil, Argentina, and Chile. Spain hasn't enough airplanes to run its own services and has no trans-Atlantic plans. Russia has filed an application to enter the U.S. but is operating into Peking, Poland, Roumania, Germany, Hungary, and out to the Chinese border.

Feeder Opposition Shaped By Airlines

Testimony by representatives of the major air carriers in the Great Lakes area came indicated last week that they will not certification of feederlines for routes which can be provided with local service by trunk line operators.

As hearings continued at Indianapolis for the second week, E. L. Talsness, executive vice-president of TWA, said that as soon as equipment is available, TWA plans a variety of services for those cities within the vicinity of its major trunk lines. Talsness, increased schedules between major cities, express flights, and long-range non-stop schedules. **✦ Disputed Route**—Highlight of their testimony was continuation of the argument for the Cleveland-to-Indianapolis-St. Louis route sought by American Airlines, TWA, and United Air Lines (Aviation News, Oct. 8).

C. Beedie Mares, president of PCA, testified in behalf of PCA's application for route exclusions to provide non-stop service between Chicago and other central



NEW EXECUTIVE:

Marshall C. Hoppin, above, is now president of Alaska Airlines, succeeding Theodore M. Lenz, who will continue as a member of the carrier's executive committee. Hoppin resigned as regional administrator of the Alaska Division of the Civil Aeronautics Administration at Anchorage to take the new job. He was assigned as superintendent of aircraft in the Territory in 1938, to supervise construction of the federal airways system there, and had been regional administrator since the Eighth region was established in 1941. Thirty-four airports and 57 radio facilities costing \$17,000,000 were installed under his direction. He is also a pilot with 6,000 hours.

industrial cities and Washington and Norfolk. He charged that service now rendered between these cities by other lines is largely incidental to transcontinental service.

Essair Feeder Operation Exceeds Success Hopes

After 10 weeks of operation, Essair, in its "doing much better than expected" with our ships (three Lockheed Electras) and flying at just about capacity loads," according to I. H. Looney, vice-president and general manager.

Maintenance and operation headquarters are at Houston, where Essair's AN 64 goes along a 670 mile route to Austin, San Angelo, Abilene, Lubbock and Amarillo. Application has been made for routes from Abilene and San Angelo to Dallas. If approved, planes will be added and main-

tenance and operation will be directed from Dallas. Certified by Civil Aeronautics Board on an experimental feederline basis, the company also wants to become an interstate operator with an extension to New Orleans. **✦ NATA Does**—Essair has been approved for membership in the Air Transport Association, whose directors were to act last last week on a resolution setting at \$640 its dues for the remainder of 1945. Regular formula of percentage of operations revenue could not be applied because of the line's brief operating history. Dues were provided on a basis of those paid by PCA's lowest paying member during the last half of last year.

NATS Experience Shifts to Airlines

Rapid demobilization of service from key airlines to carry essential military cargo is raising 1950 commercial practice.

Naval Air Transport Service is confronted with direct continuation of operations after having flown approximately \$41,000,000 tons of passengers, cargo and mail. Demobilization of NATS is under way at a rapid rate.

However, Rear Admiral John W. Reeves, Jr., commander of NATS, predicted last week at his Oakland, Calif., headquarters, that a nucleus of his war organization will be continued, and that approximately 100 transports probably will be maintained to fly to domestic and foreign points which commercial airlines cannot reach profitably.

✦ The Help—What NATS has accomplished in military flying will be reflected in the post-war development of commercial transoceanic air services. Many key NATS administrative officers, including its commander, are returning to commercial airline posts they held before the war.

They will carry to airlines now planning global operations a vast amount of operating experience and "know how" covering the long-range flying of four-engine aircraft, the meteorology, flight control technique, operating economics ground service and equipment upkeep.

Since activation in March 1942, and despite the hazards of the exploratory and combat zone flying, NATS has developed a passenger

safety record close to that of commercial airlines.

✦ Plane Load—With a peak equipment strength of 625 transport planes, 183 of them DC-4 type Douglas transports (designated R-5-D by the Navy), NATS to date has carried approximately 1,384,640 passengers and close to 203,000 tons of war-essential cargo over routes spanning the Atlantic, the United States, Alaska, and the Pacific.

NATS has developed for the maintenance of its four-engine Douglas transports a progressive heavy maintenance system which allows to airlines using similar equipment the opportunity of practically all-overhaul operations in periods of engine overhaul.

✦ Time Saver—Lt. Col. E. L. Ryder, engineering officer, COMNATS Staff, believes that four-engine major overhaul time can be cut to from three to four days, and cites a NATS "demonstration" engine change that was completed in 31 hours and 18 minutes on four-engine Douglas transport. Ryder is one of many former airline executives who joined NATS for the war's duration and now are returning to civilian jobs.

How much of NATS end-of-the-war 55,322 route miles will be retained after postwar pruning cannot be estimated at this time. Admiral Reeves believes, however, that the final reduction of

Foreign Permits

Danish Air Lines (DOLA) and Swedish International Airlines (SILA) have applied to the Civil Aeronautics Board for foreign air carrier permits to operate between capitals of their respective countries and New York City.

Operations would be conducted in collaboration with one another and with Norwegian Air Lines. Schedules would begin with one round trip weekly, with a maximum of seven airplanes. Equipment at the start would consist of rebuilt Flying Fortress, but both carriers have DC-4's on order and DC-6's on consideration under consideration.

✦ Line Chart—Routing would be via Iceland, London and Copenhagen. Alternate routes, depending on weather, would go via British Isles and Newfoundland or Iceland, Azores, and Newfoundland.



TACA SYSTEM:

TACA Airways, which recently announced an agreement for a \$1,000,000 equipment purchase contract, has issued this map showing present and proposed routes in Latin America, including the main routes of 11 affiliated and associated companies in Colombia, Venezuela, Brazil, Argentina and Paraguay. Heavy solid line shows scheduled routes, dash line shows projected routes, parallel lines show contract routes, and light solid line the connecting routes. The equipment purchase credit will be available 12 months, 30 percent through the Export-Import Bank of Washington and 10 percent through the Commercial National Bank & Trust Co. of New York. The also completed TACA's refueling program, inaugurated early in 1945 with sale of \$2,000,000 of convertible debentures.

NATS to postwar strength will not occur before the Navy has completed the task of returning to the United States troops no longer needed in the Pacific, wounded now being flown in from Pacific hospitals, and recovered allied military personnel from Japanese camps. He believes NATS participation in that work will last for at least eight more months.

Af Pilot Group Asks Job Seniority

A Military Pilots' Association, with a claimed potential of 6,000 members and a present roster of 481, has been formed at Miami to seek seniority rights, with commercial airlines, for pilots whose experience has been limited to the armed forces.

A Military Pilots' Association, with a claimed potential of 6,000 members and a present roster of 481, has been formed at Miami to seek seniority rights, with commercial airlines, for pilots whose experience has been limited to the armed forces.

Based on the association's credo is that air carrier pilots who joined the armed forces during the war have seniority, while pilots such as those in the military division of the Air Transport Command, flying the same equipment as that used by ATC's contract carriers, are at the bottom of the seniority ladder if they get an airline job after their release.

✦ ALPA Concedes—A non-profit organization, with headquarters at Little River Station, Miami, the association's first objective is to get the Air Line Pilots Association to modify contracts between ALPA and the airlines, which took "completely black and white" positions of adjusting veterans' pilots' seniority.

The pilots voted Dave Belmdet, president of ALPA, for help and advice, suggesting that any Army pilot obtaining an airline job be given a seniority date from the time the pilot was released. Army pilot's ruling, provided he then could have qualified as an airline co-pilot. As an alternative, they propose that seniority date from the time the pilot was released, giving military transport pilots. Similar proposals have been submitted to the Air Transport Association and the Civil Aeronautics Board.

ATC Base Closes

One large Air Transport Command base in the process of being transferred to military jurisdiction is that at Cecil Field, Great Falls, Mont.

Govt has furnished during the war as ATC fought to build, service and maintain base. It will remain under a caretaking detachment to ensure a determination of whether it will be declared surplus, remained, or disposed of in some other manner.

Govt is using more than a score of Army units and bases of ATC aircraft that have been temporarily inactivated or declared surplus. Those temporarily inactivated continue service War Department jurisdiction until definite decision is reached on whether they will be required for post-war use.

Of the total, two Langley Field, Va., and Lockbourne, Ohio) are possible exceptions to existing military jurisdiction. Two auxiliary fields and one landing strip are among the facilities that have been declared surplus.

ATC, NATS Keep Commercial Traffic

Airlines expected to take over by April, presidential order extends essential civilian travel on service planes.

An executive order under which Air Transport Command and Naval Air Transport Service were directed to carry commercial traffic essential to the war effort when space was available, has been extended six months by President Truman. It was to expire late this month.

Since the directive was designed to accommodate such traffic until commercial facilities were available, the length of the extension indicates that the military expects commercial carriers to have their international routes in operation by next April. If earlier, the order probably will be cancelled because the extended termination date.

ATC cited these figures last week to show its growth in four years of war:

On June 8, 1941 (while still the Flying Command) it had no planes. Two officers and one civilian made up its entire personnel. At peak, just after VJ Day, ATC had 3,560 aircraft in operation. Of these, 3,660 were major transports. Another 321 were on their way to various divisions, or in excess or surplus. Estimated value of the command fleet was \$118,000,000. ATC's personnel strength on Aug. 31, 1945, was 41,230 officers, 186,026 enlisted men, and 33,752 civilian personnel, a total of 241,008.

ATC planes landed, during last June, at 336 points on foreign shores. Domestic operations were from "countless" other airports, among them its own bases in 41 states and the District of Columbia.

The Command estimates, in the absence of complete records on early operations, that it carried 4,535,893 passengers, of whom 335,897 were sick or wounded. Passenger miles flown, 95 percent in foreign operations, totaled 4,653,990,899, and cargo ton-miles, 93 percent abroad, totaled 2,371,000,999. All operations, including transport, ferrying, training, rescue and special missions, ran up 11,774,668 hours and a total of 1,449,938,660 ferrying and transport plane miles, the equivalent of 44,590 round-the-world flights at the Register. ATC ferried 48,776 com-

Priorities End

Cancelment of priorities through the 30-day period prior to their total elimination today, Oct. 18, was expected last week to have brought this type of airline travel to a virtually negligible amount. Airline sources said little, if any, difficulty would be experienced in the change-over to a completely non-priority basis.

Source reports were that priority travel was down to 5 percent of the total. One line, Mid-Continent, reported it as less than 1 percent of total volume. Increasing requests for non-priority space, many of them for advance reservations after Oct. 18, still left airlines unable to supply the demand for seats in many instances.

bat planes overseas and delivered 228,139 in the U. S.

Cargo Experiments End

Completion of experimental transcontinental cargo flights with Consolidated Vultee's Model 39 transport has been announced by American Airlines. Thirty-five flights were made.

The air freighter, which carries a gross load of 10,000 lbs. was used in a cooperative air cargo research program. James A. Weston, American cargo traffic manager, expressed satisfaction with the trial operation. The experimental flights complete, the Model 39 has been returned to Consolidated. Weston cited the operation as

proof of air transport's ability to carry anything from heavy machinery to perishable drugs.

Cargo Rates Set By Skyway Freight

National Skyway Freight Corp., organized by former Panco Papers, has settled upon base freight charges of 28 cents per ton mile for perishable produce and cut flowers, and 33 cents per ton mile for dry cargo.

Company spokesmen declare they could carry "all the cargo we could handle" if able to obtain a transport with an operating cost sufficiently low to permit a charge to customers of 15 cents per ton mile.

Passengers — Based at Long Beach Municipal Airport, the company has been maintaining cross-country service to New York and Washington, with some hauls between California produce centers and the midwest and south. On return trips following deliveries the company has carried passengers, unable to get airline space, at airline rates.

The company's fleet of Cessna transports was bought briefly recently following the burning of a furniture-loaded plane shortly after its takeoff. The crew escaped. A CAA cash report held the company blameless, and stated the fire was caused by the loosening of an exhaust stack and ignition of an exhaust scavenger oil line, which had melted from exhaust heat.

Airline Statistics Released By CAB

Civil Aeronautics Board statistics for the first seven months of this year show that the 19 domestic airlines completed 94.26 percent of total flight miles scheduled.

Month Ended	July 31, 1945	Percent of Scheduled
Passenger miles flown	1,277,014,000	94.26
Cargo ton-miles flown	1,277,014,000	94.26
Flight hours	21,212,902	94.26

Average plane load for the period was:	1945	1944
Passenger	10.33	18.88
Tonnage of mail	1.07	1.07
Percent of capacity	107.2	108.8

Disclosure of net operating rev-

Passenger load factor was 85.42, compared with 89.51 for the corresponding period in 1944. However, average available seat per mile increased from 16.58 during this period last year to 19.61 in 1945.

Month Ended	July 31, 1945	Percent of Scheduled
Passenger miles flown	1,277,014,000	94.26
Cargo ton-miles flown	1,277,014,000	94.26
Flight hours	21,212,902	94.26

venue in June showed the 19 carriers totaling \$4,687,160, compared with \$4,210,455 in June 1944. Net operating revenue for the month ended June 30 was \$44,888,353, against \$38,665,878 for the previous year.



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Your new Stinson Voyager will take to the air with a 150-h.p., instead of a 125-h.p. motor, as originally promised. Yet, there's no increase in list price for this 20 percent increase in power.

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The scientifically shaped, richly upholstered seats really let you relax. In the soundproofed, ventilated cabin of the Voyager 150, a cabin heater keeps you warm, no matter how cold it is outside.

In addition to the traditional Stinson stability, and proven wing-lot feature, the new Voyager 150 has a new tail design and other features to make it even more safe-constant. And its flap slots even the shortest runways seem comfortably long.

The seven-foot landing-gear strut, retractable tail wheel, and push-button parking brakes give this Stinson extraordinary ground safety.

You'll have the assurance, too, that this plane is backed by Stinson's 20 years of experience in building quality planes, and by the vast research and manufacturing facilities of Consolidated Vultee Aircraft Corporation.

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WORK HORSE of the air, Kinner's ruggedly-built radial engine is simple of design and parts are easily accessible. High octane Chevron Aviation Gasoline is specially manufactured and blended to develop full-power efficiency in radial and all other type aircraft engines.



RIGHT PLANE flying in right place is any plane Chevron powers Kinner engines. The high anti-knock quality of Chevron Aviation Gasoline permits fast, even acceleration and top power output for takeoffs in limited space.



MUD ON WATER are the tests to which Kinner-designed and built craft, often used for reserve rescue work. It operates just where no other vehicle can go. With its compact, smooth-running radial the Chevron Aviation Gasoline first to build type engine, the mud boat assumes a speed on water comparable to its speed in open water. The outstanding performance of Chevron Aviation Gasoline has made it the favorite of many engine builders.



PRIVATE AIRPLANES, too, with power from the Kinner engine, get peak performance from Chevron Aviation Gasoline. Use it in your plane—Chevron will make it, too, a joy in the sky.

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Political, Economic Air Bars Set For PICAQ Council Study

Session reconvenes in Montreal; first annual meeting of International Air Transport Association also slated to open there; compromise of aviation impeding issues largely dependent upon actions taken.

The Interim Council of the Provisional International Civil Aviation Organization, under the presidency of Dr. Edward P. Warner, reconvenes in Montreal today, and before its deliberations are adjourned the world may have a better idea than it now has of the extent to which political and economic issues impeding aviation advancement can be surmounted.

Tomorrow, as the same city, the first annual meeting of the International Air Transport Association will open, with representation expected to number about 100. Presiding will be H. J. Stephenson, president of Trans-Canada Airlines, elected to that position at IATA's organization meeting in Havana last spring.

Delegate Powers—Now for the PICAQ Council may advance in filing in the disputed articles of the Chicago treaty is a matter of conjecture at this point because of uncertainty regarding the extent to which delegation can control their governments. The articles disputed, and hence left vacant, at Chicago have to do with freedom-of-the-air, traffic quotas, future participation in aviation of war-torn countries not now able to enter the field, and the regulation of rates.

The Council's committee on air transport, however, made a start on some of these matters last week and it is expected this committee may be able soon to forward proposals to the Council which it then, presumably, will present its conclusions to the PICAQ assembly meeting presently planned for next spring.

Under consideration by the air transport committee are such matters as filing of agreements and contracts, statistics and traffic surveys, procedures to be followed in arbitration of disputes, provision of airports in countries that can not afford to build them on their own initiative, regional agreements and special studies—all in addition to study of the controversial issues mentioned above.

Also at work last week was the air navigation committee, the other main statutory committee of the Council. This group has the task of drawing up minimum standards on the technical side of aviation based on the technical annexes adopted at Chicago. A subcommittee on airways systems, landing areas and ground aids met last week under Dr. Warner's chairmanship. He had later that morning of the Chicago text would be mainly editorial with only minor modifications of substance.

Details of the IATA agenda were unknown last week but the body is expected to consider first new membership applications and matters of legal, financial, technical and traffic committees. A report is expected on international traffic and IATA's general financial setup.

IATA hopes to relate its work as much as possible to that of PICAQ, inasmuch as the Chicago treaty and agreements impose certain obligations on international air carriers which they feel they best can handle through joint effort.

Bilateral Progress—Meanwhile, the United States is going ahead with bilateral arrangements with three areas which are difficult about securing freedom. Conclusion of an agreement with Norway under which little freedom, or intermediate traffic, privileges are exchanged, brings up to date an arrangement between the two

countries dated October 16, 1938. The agreement follows in general outline the proposed standard form of agreement adopted at the Chicago conference.

The government has started negotiations with Mexico looking to the conclusion of a bilateral agreement similar to that framed last winter with Canada. United States negotiators are Civil Aeronautics Board Chairman L. Welch Pogue; Member Oswald Byrne; Stanley Morgan, chief of the State Department's aviation division, and John W. Charnagay, chief of the Mexican affairs division.

Swedish and Danish airlines, meanwhile, have applied for routes to New York.

NATS Flight Plan Eases Pacific Jam

Two Naval Air Transport Service planes dashed recently at NATS command headquarters at Oakland, Calif., may influence strongly commercial air transport operating methods between San Francisco and Honolulu and on other long transoceanic routes.

Largely because of traffic congestion, NATS employs on the Pacific route what is described as "positive flight control," under which a ground flight controller directs the flight plans of all scheduled trips.

Procedure—Here takeoff the captain of the departing transport removes from a flight control officer information on three proposed flight routes. In selecting one of the three, the officer is expected to follow the course accurately. He may request additional fuel if he feels it will be needed. When approved, jointly by the positive flight controller, the ground weather officer, the selected flight plan is submitted to civilian traffic control (CAA) for final clearance of the flight.

C-54 Fleet
An original feature of this present procedure is NATS' "reciprocal release," under which the Pearl Harbor traffic control center authorizes the release of flights westbound from San Francisco, and the San Francisco traffic center authorizes the release of flights bound for the mainland from Honolulu.

Developed by Lt. Comdr. Newton Lesterhouse, discharged, this novel air transport control center, situated at Western Air, the reciprocal release has been in use by

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Second Gloucester

An Transport Command's second round-the-world Gloucester flight was due back in Washington late last week within its 50-day schedule.

ATC officials said the first flight, completed the week before in 6 days, 9 hours and 53 minutes, demonstrated that the lower set was sufficient.

Six planes were used on the first flight because of engine trouble that forced one back to Grima, but five are expected to be the rule on the regular run.

Seven Lines Shift Service Schedules

New service changes have been reported to the Civil Aeronautics Board by the airlines, as follows:

- **Chicago and Southern**—Instigated service at Fort Wayne, Ind., on AM 52 with five arrivals and five departures daily. Some non-stop service between Fort Wayne, 16th day to be served by the carrier, and Detroit will be provided.
- **Eastern**—Cancelled a cargo flight between Washington and Miami via Atlanta and added a flight between New York and St. Louis.
- **Mid-Continent**—Resumed service at Hove, S. D., on AM 35.
- **Northwest**—Added one round trip daily between New York and Twin Cities on AM 69, bringing the total to five.
- **TWA**—Resumed service at Fort Wayne on AM 36, which had not been served since May because of airport conditions.

► **Colonel Airlines**—Announced separately that acquisition of one plane and anticipated early delivery of 11 more will permit inauguration of service on the recently granted New York-Ottawa route by Jan. 1 and on the Ottawa-Washington route by Feb. 1.

► **Pan American Airways**—Announced a 45-day schedule between Rio de Janeiro and Miami, cutting 15 hours from the previous time.

CAB ACTION

The Civil Aeronautics Board:

► **Permitted** American Airlines to transport passengers between Honolulu, Hawaii, and San Francisco and Washington, D.C., and between San Francisco and Los Angeles, Calif., on AM 70.

► **Rescheduled** one scheduled flight from Detroit to St. Louis on AM 31 to St. Louis, Mo., and back to Detroit on AM 32.

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► **Rescheduled** one scheduled flight from Detroit to St. Louis on AM 31 to St. Louis, Mo., and back to Detroit on AM 32.

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The Lightplane and Safety

THE STATISTICAL STUDY of wartime lightplane accidents in the Army Air Forces, published in today's *AVIATION NEWS*, will arouse little enthusiasm and more than likely will bring indignant protestations from most flying groups. Some of the results are astonishing, and if they are indicative of a comparable accident record ahead of us in personal flying, we have a dismal outlook before conditions improve.

The strongest argument which will be lodged against the report is that military training and flying in wartime is no index to peacetime personal or sport flying. Nevertheless, the report reveals numerous weaknesses in lightplane manufacture, operation, and instruction, and in support deficiencies, which no one can deny exist. To see them in what we believe is exaggerated outline is a shock, nevertheless.

No section is more effective or timely than that outlining the AAF's problem in installing care in the young pilot. Hundreds of military pilots are now receiving CAA certificates, are flying lightplanes for the first time, and are recklessly endangering their lives in stunts for which Mustangs are better designed than Cubs. The Office of Flying Safety reveals that the AAF had the same problem now encountered by state and federal agencies.

"In the AAF, it has been found that many liaison pilots feel it is safe to take unnecessary chances with the light maneuverable type of aircraft. The answer to that has been aptly stated in Flying Safety's pilot training manual for the L-3: 'Sure, it's safe. It can just barely kill you.' Liaison aircraft accidents reveal that the need for taking the lightplane seriously is not always appreciated. Flying below prescribed minimums, improper clearances, starting the engine without checks, failure to check ignition switch during pre-flight, stalling in deep turns, failing to apply carburetor heat, failure to use brakes in time, taxiing too fast—these errors indicate both lack of care and lack of knowledge."

And the fact that instructors contributed to a

considerable number of accidents is evidence of the importance of adequate instruction. The large number of students who will be taught to fly their own planes in the next few years points to the necessity for standard instruction, high standards of instructor personnel, and uniform training literature.

Col. George Price, chief of the AAF's Office of Flying Safety, and his staff, have made an important and preceptive contribution to civil aviation.

Mr. Symington's Oversight

THE NEW SURFACED PROPERTY ADMINISTRATION, W. Stuart Symington, has indicated that he will initiate the organization of three special advisory committees to aid him in formulation of aircraft disposal policies. One committee would be named by the airlines, one would comprise individuals representing the aircraft industry, and membership of the third group would come from government aviation agencies.

Under Mr. Symington's plan, he would meet with each committee, one at a time, utilizing a joint session only in case of disagreement. The idea is a good one. The simplest solutions to problems are so seldom utilized in Washington.

But Mr. Symington has overlooked a committee to represent the thousands of independent aircraft service operators, distributors, and dealers who are expected to sell hundreds of primary and basic trainers which are scattered all over the country. If the RFC had had such an advisory committee functioning early this year to recommend a sales commission which RFC finally adopted months later, RFC's inventory of trainers, maintenance costs and payroll expenses would certainly look much better today than they do. Scores of operators would have been able to make a living, and hundreds of aircraft would have been properly repaired, serviced and flying all this past summer to give civil aviation the spur it needed so critically. How about that fourth committee, Mr. Symington?

ROBERT H. WOOD



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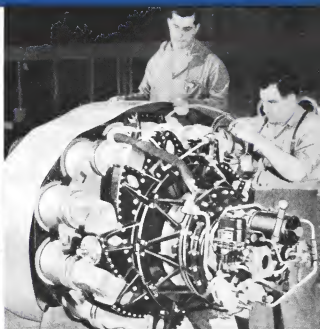
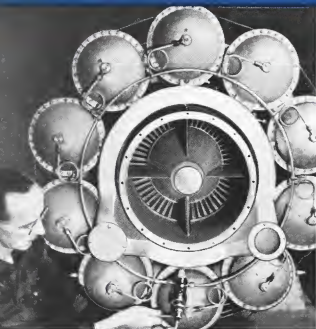
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THE P-80's PUSH



This miniature wind tunnel (at left) is in reality the rear section of a G-E aircraft gas turbine. But the winds that pass through these turbine buckets, and out the plane through a jet cone (removed here to show turbine) are searing hot gases. These gases are a mixture of compressed air and kerosene that is ignited in combustion chambers (the cylinders around the outside of the engine). The front view of the engine (right) shows starter motor and other connections. The air compressor is behind the cover shield. Connected by a shaft to the turbine, the compressor revolves thousands of times a minute, forcing air into the chambers.

This type of engine requires practically no warm-up time—and starts even more readily in cold weather. It also has the advantage of simplicity—simplicity in construction, simplicity in maintenance. It takes only fifteen minutes to remove it, as compared with sixteen hours for some planes with reciprocating engines. These are some of the reasons why General Electric intends to continue to develop and produce aircraft gas turbines—for faster flight in years to come. Many other specially designed G-E equipments for aircraft are also available. Our extensive engineering and production facilities will serve the aviation industry in peace as they did in war. *Apparatus Dept., General Electric Company, Schenectady 5, N. Y.*



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